

**Environmental Defense Fund's  
Summary of Comments for MISO Zone 4 Resource Adequacy Workshop**

Environmental Defense Fund (“EDF”), provides the following comments in response to the Illinois Commerce Commission’s (“ICC”) following the Workshops of December 7, 2017 and January 16, 2018 regarding Midcontinent Independent System Operator (“MISO”) Zone 4 Resource Adequacy. EDF submitted pre-workshop comments on November 30, 2017, presented at the December 7 workshop, submitted post-workshop Comments on December 17, 2017, and participated in the January 16, 2018 workshop. Below, EDF briefly summarizes its comments in the format of the outline circulated by the ICC.

**I. Resource Adequacy Standards**

**A. How should resource adequacy be defined and how does resource adequacy compare with or contrast with resiliency and reliability?**

The conflation of resource adequacy with reliability and resiliency is a fallacy. These concepts are separate issues, and the ICC and other bodies currently considering Dynegy’s requests must distinguish between the two. “Resource adequacy,” as used by MISO and the North American Electric Reliability Corporation (“NERC”), refers to ensuring enough MW of supply capacity for a one day in every ten year peak load event, termed a “Loss of Load Event.” Resource adequacy markets pay for that capacity to be available. Separately, reliability, as addressed by MISO and NERC, is the product of activities taken on a day-by-day, hour-by-hour, second-by-second basis in coordination with system owners and the grid operator to serve the physical needs of transmitting and balancing AC power over large geographic areas. A grid can be unreliable despite a surplus of capacity. Conversely, a grid can still be reliable despite a modeled capacity shortfall.

As the wholesale electric system continues to evolve, with a spread of new resources, the grid operators need more and better resources to provide flexibility. Dynegy has proposed the opposite in this process, seeking to limit market participants that could meet day-to-day reliability needs, taking those functions out of separate markets and requirements and lumping them in with payments for resource adequacy.

The prime example that EDF presented during the workshop was the move in PJM to reform **frequency regulation** services that support reliability. PJM historically relied on large generators to provide regulation service to help balance the grid to keep it at 60 Hz. Payments were collected from electricity customers and paid to generators for ramping up and down in response to market signals every 10 minutes, and only had to be accurate at least 70% of the time. In response to a FERC Order, PJM determined that it needed greater flexibility on the grid for frequency regulation services, and created a new Reg D signal and associated market. This

new signal called for market participants to respond every 2 seconds, which large generators simply cannot do. Instead, the PJM market saw a rapid influx of energy storage systems that could respond to the Reg D signal in less than 2 seconds with greater than 95% accuracy. More than 120 MW of energy storage was deployed in Northern Illinois in a short amount of time to serve this market, providing regulation service faster and cheaper than large generators.

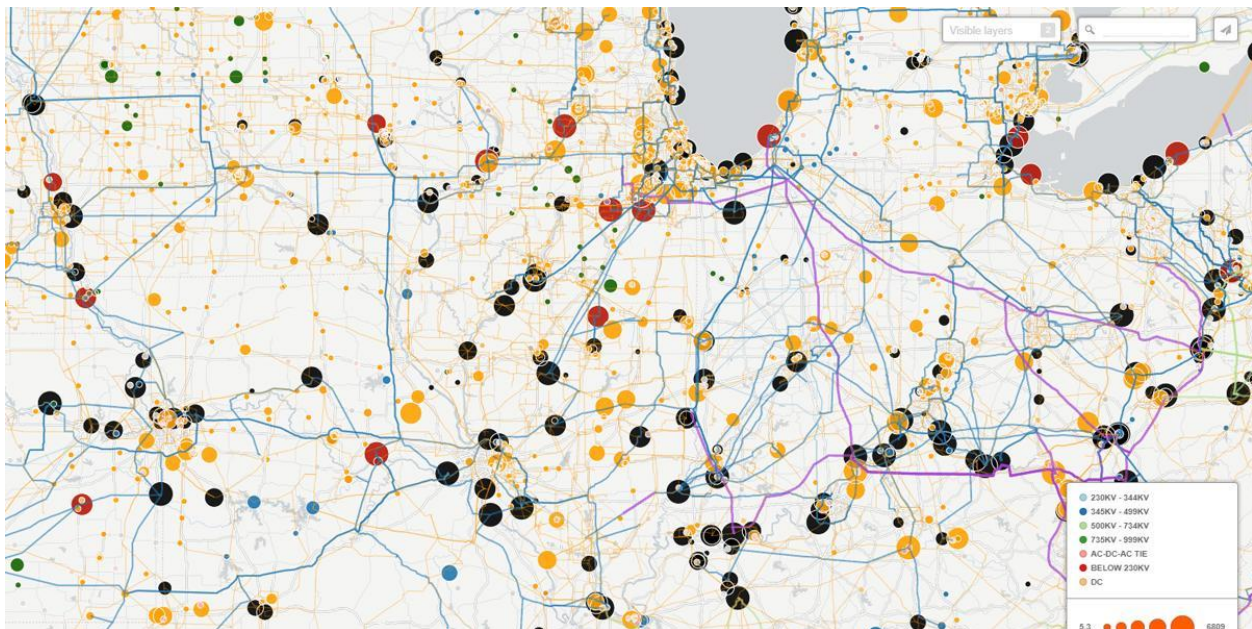
The Dynegy proposal moves in the opposite direction, locking in reliability services that need to be executed year-round to be provided only by large generators that primarily serve peak power needs. This market design creates a pointless, irrational, and detrimental bias toward only incumbent large generators that operate inflexibly, limiting supply and driving up prices unnecessarily.

In its review of the resource adequacy questions in this workshop process, the ICC and other policymakers should separate out the reliability requirements interjected into the discussion and focus solely on the overall topline question of resource adequacy.

## II. Resource Adequacy Measurement

### A. How much generation is currently available to meet Zone 4 resource adequacy requirements?

Generation resources available to meet Zone 4 resource adequacy exceed the needs of Zone 4. Dynegy's coal fleet is far from the only available resource to meet Zone 4's needs. Additionally, Zone 4 enjoys substantial import capability. Below depicts currently-available resources in and surrounding Zone 4. This does not include anticipated or prospective future resources, some of which is already in the interconnection queue.



The MISO OMS Survey and NERC 2017 Long-Term Reliability Assessment each identify surplus of resources by 2.7 GW to 4.8 GW above the regional requirement for 2018. The ICC acknowledged this surplus in its Whitepaper (at 10). This 16-22% surplus is significantly higher than the 15.8% planning reserve margin requirement of 15.8%.

**C. What current generation resources available to meet Zone 4 resource adequacy requirements are at risk of becoming unavailable going forward and what are the implications of the loss of such resources?**

Dynegy's assertion throughout this process is that retirements of Dynegy plants would threaten resource adequacy. However – tellingly – Dynegy's comments include no comprehensive analysis which shows that, even if Dynegy retires its “at risk” units, resource adequacy will be at risk given those upcoming capacity need changes. Dynegy relies on a simple math calculation, averring that a projected peak demand of approximately 9,000 MW in MISO Zone 4, minus Dynegy retirements of 750 MW, equals projected load with no reserve. Dynegy Pre-Workshop Comments at 5. Dynegy includes a table purporting to show the impact of shut down or removal (to other markets) of Dynegy units on capacity in MISO Zone 4. *Id.* at 4. Dynegy's calculations omit a number of key considerations.

MISO's most recent resource adequacy survey noted increased future capacity based on the current interconnection queue -- including twenty-eight generator interconnection projects totaling almost 4,400 MWs of capacity in the MISO Zone 4 queue as of October 2017. ICC Whitepaper at 2. This represents over two-thirds of Dynegy's total capacity of 6,500 MWs, and nearly 150% more than Dynegy's 3,000 MW of generating capacity in Downstate Illinois which it categorizes as “at risk of shutdown or removal from the Zone 4 market.” Dynegy Pre-Workshop Comments at 4.

Dynegy's “analysis” also ignores that the resources retired by Dynegy could be replaced, or are already offset, by resources from other MISO zones, or imports from other RTOs. Remaining units could even increase their capacity factors.

**D. What are the prospects for new generation resources becoming available to meet Zone 4 resource adequacy going forward?**

MISO has a surplus of prospective resources through at least 2027. NERC 2017 Long-Term Reliability Assessment at 41. In fact, prospective resources could create a surplus of anywhere from 26-24% every year from 2018-2027. *Id.* Additionally, PJM, which has significant import and export capabilities that could serve the MISO region, has even more incredible anticipated and

prospective surpluses. NERC calculates as much as a 60% prospective reserve margin by 2022. Even in the most conservative “anticipated” analysis, PJM should see at least a 27% reserve margin every year 2018-2027.

A properly-constructed MISO resource adequacy analysis would consider the impact on resource adequacy of retirement of varying levels of Dynegy units at varying future points in time, in conjunction with additional expected future capacity. Variables considered in the analysis should include: future capacity additions and the rate at which they will come online, ability to increase capacity factors of non-retiring units, load growth changes as a result of FEJA initiatives, and available resources from other MISO zones or other RTOs. Additional analysis should then be performed to test differences between retiring different units at different points in time. For example, the results of such an analysis would likely be different if all Dynegy units in Zone 4 were retired at once, if certain units were retired while others remained operational. The analysis would likely even change based upon the order of retirement of units.

As such, a comprehensive analysis is necessary to test Dynegy’s claims of resource adequacy shortfalls in the face of unit retirements. Neither Dynegy nor any other stakeholder has presented such an analysis to date, but the substantial number of variables described above - combined with the current projected capacity surplus - indicate that at least some plant retirements may not have the dire consequences alluded to by Dynegy.

**E. What non-generation resources are and may be available to meet resource adequacy and how do such resources impact resource adequacy?**

Energy usage is and will continue to trend downward as a result of expanded energy efficiency, expanded and demand response programs, and evolving technology. Less resources will thus be required in the future. Concurrently, nuclear retirements have been forestalled and distributed resources are increasing for a number of reasons including the Future Energy Jobs Act. Grid operators’ traditional reliance on large generators to provide needed capacity no longer presents a full picture of future available capacity.

The ICC and policymakers should explore whether other wholesale markets have attempted to allow for different types of demand-side or new technology resources to meet reliability needs as a superior alternative to old, slow-moving generators.

**F. How well do existing programs and initiatives predict future resource adequacy?**

The MISO OMS Survey and NERC Long Term Reliability Report provide two measures of future resource adequacy. EDF presented a number of important considerations in future resource adequacy prediction that the truncated ICC workshop process did not allow time to explore. These issues included:

- How to best estimate additional capacity coming online as a result of the Future Energy Jobs Act;
- How to calculate declining usage;
- How to calculate forestalled nuclear retirements;
- What conditions lead to a peak event (one day in ten year high);
- What tools are available to manage peak events;
- What capacity is available from other states;
- What capacity is available that sits in MISO Zone 4 but sells capacity into other markets;
- How accurate historical reserve margin requirements and load forecasts have been;
- What tools other than a capacity market are available for ensuring reliability if resource adequacy is primarily met from out-of-state resources; and
- How demand-side or new technology resources (such as demand response, energy storage, smart inverters, or other approaches) can be leveraged.

#### **IV. Scope**

##### **A. Please provide commentary on any relevant substantive or process issue you believe has not been adequately captured in the Sections above.**

EDF expressed strong concern that the hurried process used for these workshops denied stakeholders the opportunity to meaningfully participate in the process, and denied the ICC opportunity to consider the complex issues in MISO Zone 4 in an appropriately comprehensive manner. The issues the ICC sought in a mere two workshops are complex and numerous. Identifying, analyzing, evaluating, negotiating, and implementing wholesale market concerns and solutions is typically a multi-year process for sophisticated wholesale market operators even when there is consensus that a problem exists and should be resolved.

Not only is there no consensus that a problem exists and should be resolved, there seems to be near consensus that the inverse is true – that a problem does not exist and that there is nothing that needs to be resolved. The ICC’s own analysis acknowledges that there is no resource adequacy issue in the near term.

Two workshops and two substantive comment periods did not provide sufficient opportunity for stakeholders to prepare analyses on the issues, nor fully vet proposals by some participants that could raise rates on Illinois customers by billions of dollars. The process further does not allow adequate time for the ICC to thoroughly investigate the potential issues themselves. Further, the first workshop date and first set of substantive comments was scheduled less than one month after

stakeholders were notified of the process, and fell during an exceptionally busy time of year for stakeholders, the Commission staff, and the Commission itself, with both regular annual dockets and docket load due to the implementation of the Future Energy Jobs Act.

These issues are only compounded by uncertainties currently surrounding MISO Zone 4 and Dynegy, the dominant generator in MISO Zone 4. Those include:

1. A pending merger of Dynegy and Vistra, which will close in Q2 of 2018.
2. Potential changes to the multi-pollutant standards rule pushed by Dynegy and currently under consideration at the Illinois Pollution Control Board.
3. Legislation before the Illinois General Assembly.
4. The results of the Notice of Proposed Rulemaking at the Federal Energy Regulatory Commission (“FERC”), which directed grid operators to review and extensive list of questions and report back to FERC.
5. Inter-RTO impacts on MISO of the pending PJM price formation market reform proposal and request that the FERC open a new docket to define grid resilience.

As such, EDF urged the ICC to amend its timeline to: 1) reschedule the first workshop and round of comments until such time as stakeholders had meaningful opportunity to conduct analysis, and 2) extend the schedule to provide additional time between workshops for stakeholders and the ICC to conduct thorough analysis, and to include additional workshops to take place in the wake of any outcomes of each of the five uncertainties outlined above, and any additional related issues that arise. EDF proposed a schedule that, at a minimum, would have added 3-4 workshop sessions, from March through September. EDF maintains that the truncated schedule of this process has been detrimental to all parties.

## **V. Potential Policy Options**

### **D. What actions should the Illinois Commerce Commission and/or the Illinois Power Agency take, if any, to address resource adequacy assuming no new legislative authority?**

The ICC can, either through the forward-looking NextGrid process or a separate proceeding, discuss ways to improve the functions and markets for different day-to-day or other reliability questions included by Dynegy in their legislative proposal:

- transmission security

- voltage support
- dynamic stability
- frequency response
- fuel security and on-site fuel supply
- import transfer capability

*See 100th Gen. Assem., House Bill 4141 2017 Sess.; SB 2250.*

A thoughtful investigation of these reliability questions would not seek to lump them into a capacity market, or use them as a scoring system for a capacity market, but instead to determine the fundamentals of their grid value and how different technologies could meet their needs. The investigation should raise the following questions:

1. What are the various functions on bulk transmission system that are needed to maintain reliability of power delivery?
2. What are the risks of failure for each of those functions and the likelihood of those risks?
3. What technologies can provide those functions (energy storage, smart inverters, equipment, traditional generators, DER)?
4. How well do different technologies perform those functions?
5. How can (and should) markets be designed to allow different actors and technologies to perform those functions (such as the frequency regulation reform at other RTOs)?
6. What rules and regulations at MISO could be changed to allow for new actors to perform reliability functions better and at a lower cost?

**E. What actions should the Illinois General Assembly take, if any, to address Zone 4 resource adequacy?**

Every stakeholder, excepting Dynegy and MISO, emphasized in their comments (and presentations, where applicable), the positive resource adequacy outlook for Illinois. In fact, even MISO had no choice to concede that, at least in the short-term, there is no resource adequacy concern. *See MISO Pre-Workshop comments at 1.* Only Dynegy asserts a potential near-term adequacy issue, and that is solely on the basis of Dynegy's threatened closure of certain of its own generation. *See Dynegy Pre-Workshop comments at 1, 4.*

Dynegy has - in this and other processes - used its position as the largest generator in downstate Illinois to attempt to strong-arm regulators and legislators into "solving" a problem that does not exist (and, if it does, it is a problem of Dynegy's own creation).

Dynegy relies on politically-sensitive narratives, such as reliability and economic impact, as a scare tactic. *See Dynegy December 7 Presentation at 6.* The reality is that Dynegy's aging coal fleet is simply not economically competitive, and its units may not be necessary to maintain resource adequacy. The ICC is quite right to propose, as its first potential policy option, continuing to rely on existing competitive forces and market structures. *ICC Whitepaper at 17.*

No legislative action is necessary or appropriate at this time.